



### 2010 Annual Summary Bettles Air Quality Monitoring Station AK06

The Arctic Network Vital Signs Monitoring Program (ARCN) has been effectively operating a National Park Service (NPS) Air Resource Division (ARD) supplied and funded air quality monitoring station in Bettles, Alaska since June 2009. Although Bettles is not directly inside of any of the ARCN parks, it was chosen as the best location due to reliable power, year-round staffing and its location on the south side of the Brooks Range, thought to be representative of the bulk of the network's airshed.

At the Bettles Station monitoring of wet deposition and regional haze is conducted in collaboration with the National Atmospheric Deposition Program/National Trends Network (NTN), the National Atmospheric Deposition Program/Mercury Deposition Network (MDN), and the Interagency Monitoring of Protected Visual Environments Network (IMPROVE). Each nationwide air quality monitoring network establishes its own standardized sampling and analytical methods, which are peer reviewed during program development. The national network protocols therefore serve as the park air quality monitoring protocols.



Ranger Nina Valadez downloads Raingauge data

Our two greatest accomplishments for the 2010 season have been the consistent implementation of the weekly sampling, and the submission of the ARCN Wet Deposition Monitoring Protocol for external peer review. Consistent weekly sampling is no small achievement for a remote site like this one. In addition we have successfully implemented all quality assurance and quality control procedures. Furthermore, all annual maintenance has been completed for the station.

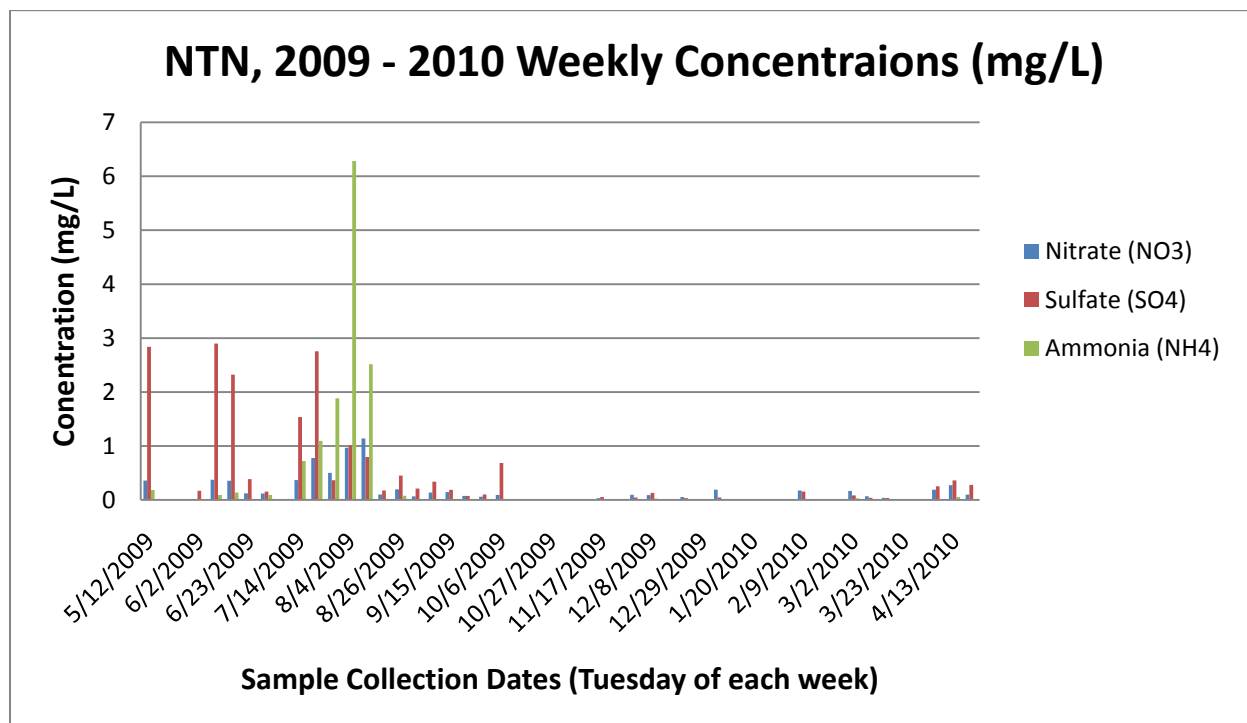


Figure 1. Concentrations in milligrams per liter (mg/L) of ammonium, nitrate, and sulfate in precipitation at Bettles Air Quality Monitoring Station, May12 2009 – April 20 2010.

There is approximately a 5-6 month time lag between the time that samples are collected and the time that the data is available on the NADP <http://nadp.sws.uiuc.edu/> and the IMPROVE <http://vista.cira.colostate.edu/improve/> website. Isopleth maps generally are available by September of the year following collection. In addition to providing access to raw data, the NADP and IMPROVE websites provide reports, publications and a variety of data products that support the national program's objectives. The data from the Bettles station is now available on the networks web sites. However, the majority of the trend analysis, for all the networks, is completed on an annual basis and therefore it will be another year before enough data has been collected at the Bettles station to become included in this reporting and most likely another 3 to 5 years until that data can be meaningfully utilized in annual trend analysis.